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Aromatic and Chiral Phosphonate-Phosphanes - New Types of Hemilabile Ligands

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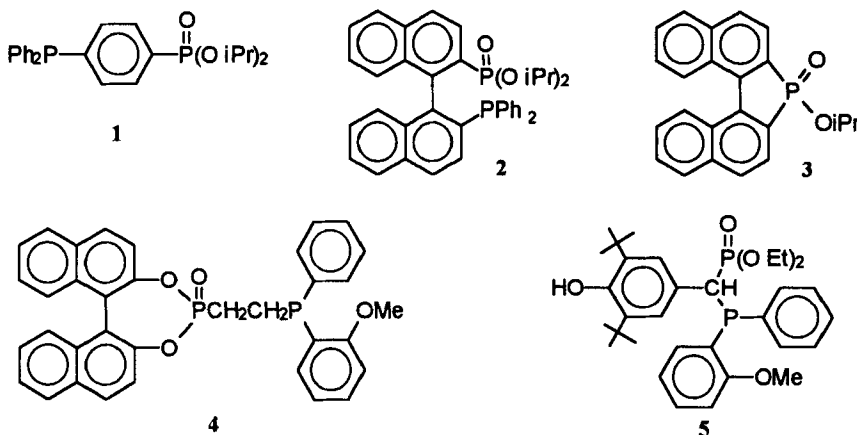
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AROMATIC AND CHIRAL PHOSPHONATE-PHOSPHANES - NEW TYPES OF HEMILABILE LIGANDS

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Mixed bidentate ligands gained growing interest in catalytic chemistry. These ligands are able to form hemilabile complexes, in which the phosphane group is strongly bonded to the central atom and the second ligand moiety containing O, N or S is weakly co-ordinated. In view of recent developments in asymmetric carbonylation, introduction of chirality in hemilabile ligands should be a promising approach. Recently, we have published the properties of aliphatic phosphonate-phosphanes and their rhodium complexes as catalysts in carbonylation^{1,2}. Now we wish to present new types of phosphonate-phosphanes **1,2,4** and **5** where both phosphorus-containing groups are connected with aromatic rings and/or are part of chiral compounds. For example, when dibromo-binaphthyl was used as starting material, both a chiral mixed bidentate ligand **2** and a monodentate phosphinate **3** were obtained, depending on the synthesis route.



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